Lab Assignment & Solution

Cybersecurity Professional Program

Introduction to Python for Security

Loops

PY-03-LS4
User Dictionary

Note: Solutions for the instructor are shown inside the green box.

Lab Objective

Understand how to work with user-defined dictionaries to control the program flow.

Lab Mission

Work with input from users to control the program flow, and insert and retrieve the desired output.

Lab Duration

15–20 minutes

Requirements

- Knowledge of how to handle input from the user and work with variables.
- Knowledge of string and collection manipulation.

Resources

- Environment & Tools
    - Windows, Linux, MacOS
        - Python 3
        - PyCharm

Textbook References

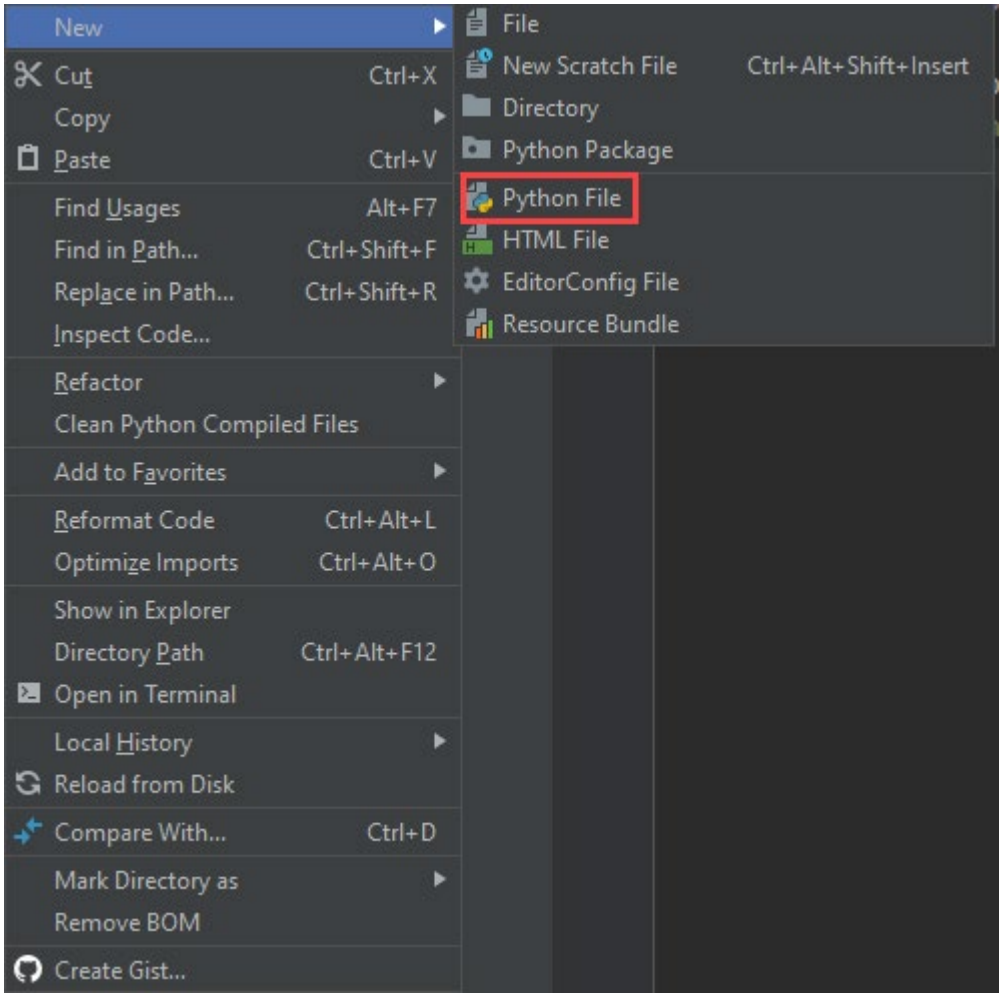
- Chapter 3: Loops
    - Section 1: For & While

Lab Task: User Dictionary

Construct an interactive script that asks the user for the name of a service and a port number, and assigns the values in a dictionary as a key-value pair. Then create a while loop, whereby if the user chooses 0 as either input, the loop will end.

1 Create a new Python file in PyCharm.

Right-click the project you created previously, and select **New → Python File**.



2 Create an empty dictionary.

```
servicePorts = {}
```

3 Create an infinite ***while*** loop.

```
servicePorts = {}

while True:
```

4 Create a variable that asks for a service name.

```
servicePorts = {}

while True:
     service = input("Please enter a service's name or type
'0' to stop: ")
```

5 Add an ***if*** condition in the while loop to break the loop if the input from the user is 0.

```
servicePorts = {}

while True:
    service = input("Please enter a service's name or type
'0' to stop: ")
    if service == "0":
        break
```

6 In the ***while*** loop, ask for a port number and assign it to the ***port*** variable.

```
servicePorts = {}

while True:
    service = input("Please enter a service's name or type
'0' to stop: ")
    if service == "0":
        break

    port = input("Please enter a port number or type '0' to
stop: ")
```

7 Add another ***if*** condition in the while loop to break the loop if the input from the user is 0.

```
servicePorts = {}

while True:
    service = input("Please enter a service's name or type
'0' to stop: ")
    if service == "0":
        break

    port = input("Please enter a port number or type '0' to
stop: ")
    if port == "0":
        break
```

8 Insert the data from the ***service*** and ***port*** variables as key-value pairs, in the empty dictionary created during step 1.

```
servicePorts = {}
service = port = "1"
while service != "0" and port != "0":
    service = input("Please enter a service's name or type '0' to
stop: ")
    if service == "0":
        break

    port = input("Please enter a port number or type '0' to stop:
")
    if port == "0":
        break

    servicePorts[service] = port
```

9 When the user decides to quit by pressing ***0***, print the entire dictionary.

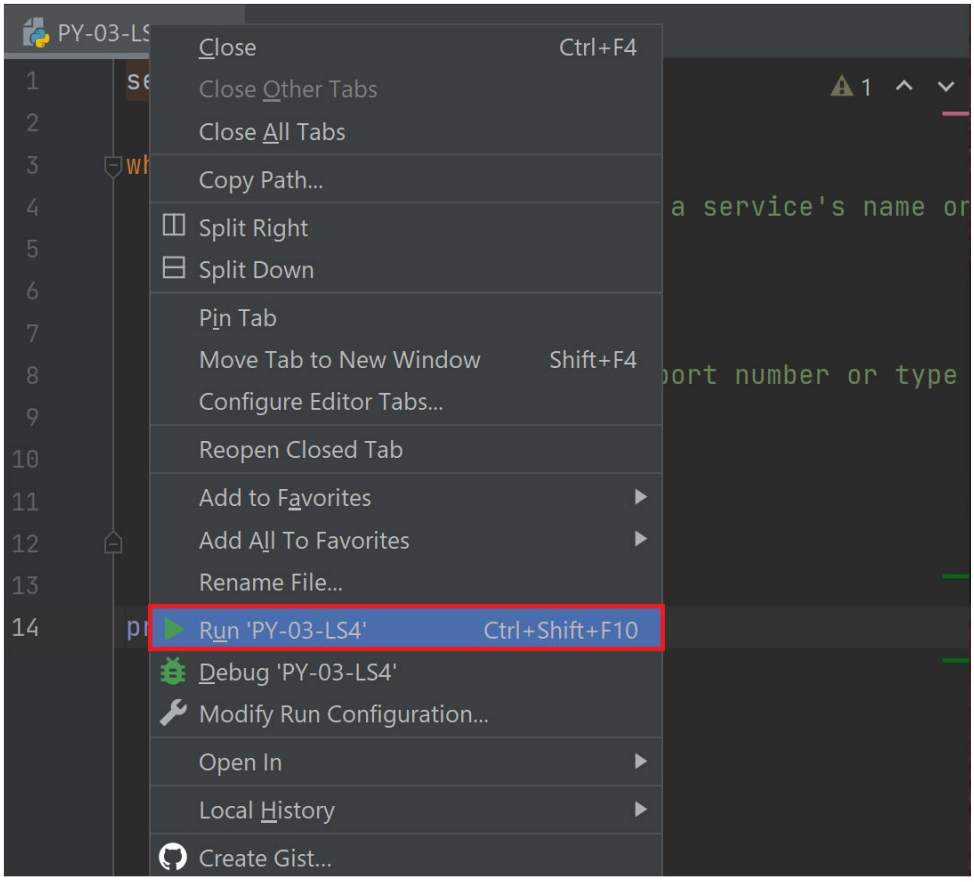
```
servicePorts = {}
service = port = "1"
while service != "0" and port != "0":
    service = input("Please enter a service's name or type '0' to
stop: ")
    if service == "0":
        break

    port = input("Please enter a port number or type '0' to stop:
")
    if port == "0":
        break

    servicePorts[service] = port

print(servicePorts)
```

10 Right click on the filename to open the drop down list and click on Run “Filename.”



11 Input a service name (DNS) with its proper port number (53) and then end the program (0) which should give you these final results.

```
Please enter a service's name or type '0' to stop: DNS
Please enter a port number or type '0' to stop : 53
Please enter a service's name or type '0' to stop: 0
{'DNS': '53'}

Process finished with exit code 0
```